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I N T E R - O F F I C E C O R R E S P O N D E N C E

Richmond, Virginia

To: Distribution

Date: 25 September, 1987

From: Barbro Goodman

Subject: CIGARETTES FOR ANALYTICAL SIDESTREAM RESEARCH

Based on discussions between Chemical Research, Analytical Research, and Cigarette Technology personnel, several cigarette models were designed specifically for research on sidestream smoke composition. The objective for the upcoming studies is to investigate the effect of cigarette circumference and $Mg(OH)_2$ wrapper. In order to provide a matrix for the analyses, prototypes were made at three different circumferences (17 mm, 20 mm and 24.8 mm) each with a standard commercial wrapper (Kimberly-Clark 156) and with a 12% $Mg(OH)_2$ wrapper. All the cigarettes were made from the same batch of tobacco in a nondiluted 100 mm filtered configuration.

The selected blend was the current project TRIM blend with standard production components. DBC Bright, DBC Burley, MT Oriental, RLTC and RL 150B was used. It contained no stems or expanded tobaccos, so that better looking ultra slim cigarettes could be produced. All samples had the same casing and aftercut system.

The Hauni lab max was used for all three circumferences. Cellulose acetate filters were made with widely varying efficiencies in an effort to keep the mainstream tar deliveries within reasonable levels. The tables attached to this memo give analytical data for each of the models. As can be seen in Table I, the 17 mm configuration gave extremely high RTD's for nonventilated cigarettes. This could have an effect on mainstream puffing to a greater extent than for a standard circumference cigarette. Ultra slim prototypes typically have RTD's above 6" water for 45 - 55% filter ventilation. The variability of the RTD was also greater for the slim cigarettes.

Tables II and III give the calculated differences in data for each circumference with the commercial and the low sidestream wrappers at standard circumference as controls.

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In addition to the circumference matrix, three other pairs of cigarettes will be investigated for sidestream deliveries of certain components. These cigarettes represent three different tar categories; full flavor, flavor low, and ultra low tar, all with the 12% Mg(OH)₂ wrapper. Each tar level has a commercial control companion. The mainstream deliveries for these cigarettes are shown in Tables IV, V, and VI.

It is also strongly recommended that a prototype with higher levels of Mg(OH)₂ (35-40%) in the wrapper utilizing 100% expanded tobaccos be analyzed. Selection of such a model is in progress.



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